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EXAMINER	
CUTLER, ALBERT H	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/702,200	KUBO, RYOJI	
	Examiner	Art Unit	
	Albert H. Cutler	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to communication filed on May 31, 2007. Claims 1-15 are pending in the application.

Response to Arguments

2. Applicant's arguments filed May 31, 2007 have been fully considered but they are not persuasive.

3. Applicant argues, "In the device disclosed by Nakamura et al., processing of the image data obtained by the previous image sensing operation does not occur "in accordance with start of reading of the image data from the image sensing element," as is now required by independent claims 1, 2, and 11.."

Applicant further argues, "As can be seen from Fig. 8, in the device disclosed in Nakamura et al., the processing of data from the first shutter release occurs during the time period Pc, which corresponds to the exposure/storage stage for the second shutter release. The processing of data from the first shutter release does not occur in accordance with start of reading the image data corresponding to the second shutter release, which does not occur until the exposure/storage operation is completed."

4. The Examiner acknowledges that the reading of the image data corresponding to the second shutter release does not occur until the exposure/storage operation is completed, as evidenced by figure 8. However, the Examiner refutes that Nakamura et al. does indeed teach that the processing of the image data obtained by the previous image sensing operation occurs in accordance with start of reading of the image data from the image sensing element. See figure 8, column 7, lines 34-40. JPEG

compression(i.e. image processing) of the image data obtained by the previous image sensing operation("JPEG COMPRESSION 1", figure 8), which compression is indicated by "Pd" of figure 8, occurs in accordance with the start of reading("READOUT 2") of the image data from the image sensing element(see figure 8). The JPEG compression(i.e. image processing) takes place in an image processing device(JPEG, 212, figure 4), which performs image processing for the image data obtained by said image sensing device(column 7, lines 34-40).

5. Therefore, the Examiner is maintaining the rejection.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1, 2, 3, 8-11, and 13 rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura et al.(US Patent 6,963,374).

8. The Examiner's response to Applicant's arguments, as outlined above, is hereby incorporated into the rejection of claims 1, 2, 3, 8-11, and 13 by reference.

Consider claim 1, Nakamura et al. teach:

An image sensing apparatus("Digital Camera", figures 1-4, column 2, line 56 through column 4, line 43) comprising:

an image sensing device("CCD", 303, figure 4) which outputs image data obtained by an image sensing element(column 3, lines 50-58);

a white balance integration device("Black Level Correction/WB", 211a, figure 6a) which integrates the image data output from said image sensing device for white balance processing(column 5, lines 55-63);

an image processing device(JPEG, 212, figure 4) which performs image processing for the image data obtained by said image sensing device(The JPEG compression(i.e. image processing) takes place in an image processing device(JPEG, 212, figure 4), which performs image processing for the image data obtained by said image sensing device(column 7, lines 34-40).);

a display device("EVF", 20, or "LCD", 10, figure 4) which displays an object image during imaging on the image sensing element(The display acts as a "live view display"(i.e. an object image is displayed during imaging), column 3, lines 16-23.); and

a control device("main CPU", 21, figure 4) which causes said white balance integration device(211a) to perform integral processing for the image data during read of an image signal from the image sensing element(column 5, lines 50-63), causes said display device(21) to display the object image at least after the integral processing ends(column 5, line 66 through column 6, line 3), and causes said image processing device(212) to process the image data obtained by previous image sensing operation in accordance with start of reading the image data from the image sensing element(See figure 8, column 7, lines 34-40. JPEG compression(i.e. image processing) of the image data obtained by the previous image sensing operation("JPEG COMPRESSION 1",

figure 8), which compression is indicated by "Pd" of figure 8, occurs in accordance with the start of reading("READOUT 2") of the image data from the image sensing element(see figure 8).).

Consider claim 2, Nakamura et al. teach:

An image sensing apparatus("Digital Camera", figures 1-4, column 2, line 56 through column 4, line 43) comprising:

an image sensing device("CCD", 303, figure 4) which reads an image signal corresponding to an object image from an image sensing element(column 3, lines 50-58), and outputs first image data(First image data corresponds to initial capture data which is written as raw data into DRAM(232) of figure 4, column 7, lines 10-18);

a white balance integration device("Black Level Correction/WB", 211a, figure 6a) which integrates the first image data(raw data) output from said image sensing device for white balance processing(column 7, lines 15-18);

a display device("EVF", 20, or "LCD", 10, figure 4) which displays the object image during imaging on the image sensing element(The display acts as a "live view display"(i.e. an object image is displayed during imaging), column 3, lines 16-23.);

an image processing device("image signal processor", 211, figures 4 and 6a, and JPEG, 212, figure 4) which generates second image data on the basis of the first image data output from said image sensing device(Raw data(i.e. first image data) is read out

of memory and processed by the image signal processor(211) to give second image data, column 7, lines 24-28.); and

a control device("main CPU", 21, figure 4) which causes said white balance integration device(211a) to perform integral processing for the first image data(raw data) during read of the image signal from the image sensing element(column 5, lines 50-63), causes said image processing device(211) to perform image processing of first image data obtained by previous image sensing operation(column 7, lines 24-28), and causes said display device to display the object image during imaging on the image sensing element after the integral processing and the image processing end(See figure 7, when the first image data processing of ST9 and the previous image data processing of ST10-ST12 are completed, the flow chart loops back around to ST2 and ST3 wherein the display device displays the object image. Note: The CPU(21) controls all necessary functions of the digital camera, column 4, line 1.),

wherein said control device(21) causes said image processing device(212) to process the first image data obtained by previous image sensing operation in accordance with start of reading the image data from the image sensing element(See figure 8, column 7, lines 34-40. JPEG compression(i.e. image processing) of the image data obtained by the previous image sensing operation("JPEG COMPRESSION 1", figure 8), which compression is indicated by "Pd" of figure 8, occurs in accordance with the start of reading("READOUT 2") of the image data from the image sensing element(see figure 8).).

Consider claim 3, and as applied to claim 2 above, Nakamura et al. further teach:

the first image data includes image data having a signal amount corresponding to a color filter of the image sensing element(column 3, lines 50-58, the image signal is filtered into red, green, and blue image data),

and the second image data includes image data capable of confirming the object image(column 4, lines 11-19).

Consider claim 8, and as applied to claim 2 above, Nakamura et al. further teach of a temporary storage device("DRAM", 232, and "Memory Card", 8, figure 4) which temporarily stores at least two first image data(DRAM(232) reads in raw data(first first image data) over channel 1, and reads out preceding image data(second first image data) over channel 2, column 7, lines 15-49. Therefore, both first image data are stored in DRAM temporarily.) and one second image data(The memory card(8) stores second image data(i.e. processed image data), column 7, lines 34-38).

Consider claim 9, and as applied to claim 1 above, Nakamura et al. further teach:

Said control device so controls as to start processing of said image processing device(211a) at any one of a timing at which a photographing instruction switch is released(See figure 7, in step ST1 a shutter release button(i.e. photographing instruction switch) is pressed, and this leads to step ST9 wherein white balance processing occurs. See column 6, line 57 through column 7, line 23).

Consider claim 10, and as applied to claim 1 above, Nakamura et al. further teach:

When display operation of said display device stops("live view display is not produced", column 7, lines 18-19), said control device so controls as to start processing of said image processing device(211a) at any timing at which a photographing instruction switch is released(See figure 7, in step ST1 a shutter release button(i.e. photographing instruction switch) is pressed, and this leads to step ST9 wherein white balance processing occurs. A live view display is not produced during step ST9. See column 6, line 57 through column 7, line 23).

Consider claim 11, Nakamura et al. teach:

An image sensing apparatus("Digital Camera", figures 1-4, column 2, line 56 through column 4, line 43) comprising:

an image sensing device("CCD", 303, figure 4) which converts light from an object into image data(column 3, lines 50-58), and outputs the image data(Initial capture data is written as raw data into DRAM(232) of figure 4, column 7, lines 10-18);

a display device("EVF", 20, or "LCD", 10, figure 4) which displays the image data obtained by said image sensing device(The display acts as a "live view display"(i.e. an object image is displayed during imaging), column 3, lines 16-23.);

an image processing device("image signal processor", 211, figures 4 and 6a, and JPEG, 202, figure 4) which performs image processing for the image data obtained by said image sensing device(Raw data(i.e. first image data) is read out of memory and

processed by the image signal processor(211) to give second image data, column 7, lines 24-28.);

and a control device("main CPU", 21, figure 4) which causes said image processing device(211) to perform processing for the image data during read of image data of a first object from said image sensing device(column 5, lines 50-63), causes said display device to display image data of a second object after end of reading the image data of the first object(See figure 7, when the first image data processing of ST9 and the previous image data processing of ST10-ST12 are completed, the flow chart loops back around to ST2 and ST3 wherein the display device displays the second object.) and so controls as to perform image processing for the image data of the first object after end of displaying the image data of the second object(In step ST10 of figure 7, image data of a first object is processed after the shutter is released in ST1 to capture image data of a second object, column 7, lines 15-49),

wherein said control device(21) causes said image processing device(212) to process the image data obtained by previous image sensing operation in accordance with start of reading the image data from the image sensing element(See figure 8, column 7, lines 34-40. JPEG compression(i.e. image processing) of the image data obtained by the previous image sensing operation("JPEG COMPRESSION 1", figure 8), which compression is indicated by "Pd" of figure 8, occurs in accordance with the start of reading("READOUT 2") of the image data from the image sensing element(see figure 8).).

Consider claim 13, and as applied to claim 11 above, Nakamura et al. further teach that the image processing includes integral processing of image data for white balance processing(column 7, lines 15-18).

Claim Rejections - 35 USC § 103

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 4, 5, 7, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. in view of Kagle et al.(US Patent 6,967,680).

11. The Examiner's response to Applicant's arguments, as outlined above, is hereby incorporated into the rejection of claims 4, 5, 7, 14, and 15 by reference.

Consider claim 4, and as applied to claim 2 above, Nakamura et al. teach of a control device that causes integral processing of first image data after causing a display device to display the object image during imaging on the image sensing element(see claim 2 rationale).

However, Nakamura et al. do not explicitly teach that the apparatus further comprises a defect correction device which corrects a defective pixel portion of image data when the image sensing element has a defective pixel, and said control device controls said defect correction device so as to correct a defective pixel portion of the first image data during the integral processing.

Kagle et al. is similar to Nakamura et al. in image data is collected from the image sensor, preliminary processing is performed to yield first image data, second image data is obtained through post processing, and the final image is stored in memory(see figure 2, column 3, line 4 through column 4, line 12). Kagle et al. is also similar to Nakamura et al. in that white balance processing is performed during pre-processing(column 3, lines 18-23, figure 3).

However, in addition to the teachings of Nakamura et al., Kagle et al. teach that the apparatus further comprises a defect correction device(428, figure 3) which corrects a defective pixel portion of image data when the image sensing element has a defective pixel(column 3, lines 31-37), and said defect correction device(428) corrects a defective pixel portion of the first image data during the integral processing(See column 3, lines 31-33, defective pixel processing is performed during pre-capture process control(i.e. integral processing), step 304, figure 2.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have a defect correction device for correcting defective pixels as taught by Kagle et al. in the integral image processing on the first image data within the camera device taught by Nakamura et al. for the benefit that the defect correction device could determine malfunctioning pixels(column 3, lines 35-37) and thereby modify the performance characteristics of the camera in order to correct for defective pixels in advance, thus minimizing any processing delays that are undesirable when taking photographs in rapid succession(Kagle et al., column 1, lines 20-47).

Consider claim 5, and as applied to claim 2 above, Nakamura et al. teach of a control device that causes integral processing of first image data after causing a display device to display the object image during imaging on the image sensing element(see claim 2 rationale). Nakamura et al. also teach of performing white balance processing after causing said display device to display the object image during imaging on the image sensing element(see claim 2 rationale), and that white balance processing is performed on the basis of an integral result of said white balance integration device(column 7, lines 15-19).

However, Nakamura et al. do not explicitly teach that the apparatus further comprises a defect correction device which corrects a defective pixel portion of the first image data when the image sensing element has a defective pixel, or that a white balance coefficient calculation device calculates a white balance coefficient during integral processing to be used to perform white balance image processing.

Kagle et al. is similar to Nakamura et al. in image data is collected from the image sensor, preliminary processing is performed to yield first image data, second image data is obtained through post processing, and the final image is stored in memory(see figure 2, column 3, line 4 through column 4, line 12). Kagle et al. is also similar to Nakamura et al. in that white balance processing is performed during pre-processing(column 3, lines 18-23, figure 3).,

However, in addition to the teachings of Nakamura et al., Kagle et al. teach that the apparatus further comprises a defect correction device(428, figure 3) which corrects a defective pixel portion of image data when the image sensing element has a defective

pixel(column 3, lines 31-37), and said defect correction device(428) corrects a defective pixel portion of the first image data during the integral processing(See column 3, lines 31-33, defective pixel processing is performed during pre-capture process control(i.e. integral processing), step 304, figure 2.). Kagle et al. also teach that a white balance coefficient calculation device(404, figure 3) calculates a white balance coefficient(After white balance process control is completed, a processing value(i.e. white balance coefficient) is returned to the pre-capture process control, column 3, lines 18-27.) during integral processing to be used as a basis to perform white balance image processing(The processing results of a first frame of image data obtained during pre-processing(i.e. integral processing) are used to process the second frame of image data as long as the results are within a threshold. See figure 6, column 5, lines 23-44).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have a defect correction device for correcting defective pixels, and a white balance coefficient calculation device as taught by Kagle et al. in the integral image processing on the first image data within the camera device taught by Nakamura et al. for the benefit that the defect correction device could determine malfunctioning pixels(column 3, lines 35-37), and the white balance coefficient calculation device could produce values which could be applied to later image frames, thereby enabling the camera to modify the performance characteristics in order to correct for defective pixels in advance, and skip the step of determining a white balance coefficient when unnecessary, thus minimizing any processing delays that are

undesirable when taking photographs in rapid succession(Kagle et al., column 1, lines 20-47).

Consider claim 7, and as applied to claim 2 above, Nakamura et al. teach of a control device and a display device(see claim 2 rationale).

However, Nakamura et al. do not explicitly teach that the apparatus further comprises a defect correction device which corrects a defective pixel portion of image data when the image sensing element has a defective pixel, and said control device controls said defect correction device so as to correct a defective pixel portion of the first image data before causing said image processing device to start the image processing after causing said display device to display the object image.

Kagle et al. is similar to Nakamura et al. in image data is collected from the image sensor, preliminary processing is performed to yield first image data, second image data is obtained through post processing, and the final image is stored in memory(see figure 2, column 3, line 4 through column 4, line 12). Kagle et al. is also similar to Nakamura et al. in that white balance processing is performed during pre-processing(column 3, lines 18-23, figure 3).

However, in addition to the teachings of Nakamura et al., Kagle et al. teach that the apparatus further comprises a defect correction device(428, figure 3) which corrects a defective pixel portion of image data when the image sensing element has a defective pixel(column 3, lines 31-37), and said defect correction device(428) corrects a defective pixel portion of the first image data during the integral processing(See column 3, lines

31-33, defective pixel processing is performed during pre-capture process control(i.e. integral processing, before the start of image processing), step 304, figure 2.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have a defect correction device for correcting defective pixels as taught by Kagle et al. in the integral image processing on the first image data within the camera device taught by Nakamura et al. for the benefit that the defect correction device could determine malfunctioning pixels(column 3, lines 35-37) and thereby modify the performance characteristics of the camera in order to correct for defective pixels in advance, thus minimizing any processing delays that are undesirable when taking photographs in rapid succession(Kagle et al., column 1, lines 20-47).

Consider claim 14, and as applied to claim 13 above, Nakamura et al. further teach that the image sensing device reads out image data of one frame in two fields(column 3, lines 50-58).

However, Nakamura et al. do not explicitly teach that said image processing device performs integral processing of the image data before the completion of the read in the two fields.

Kagle et al. is similar to Nakamura et al. in image data is collected from the image sensor, preliminary processing is performed to yield first image data, second image data is obtained through post processing, and the final image is stored in memory(see figure 2, column 3, line 4 through column 4, line 12). Kagle et al. is also

similar to Nakamura et al. in that white balance processing is performed during pre-processing(column 3, lines 18-23, figure 3).

In addition to the teachings of Nakamura et al., Kagle et al. teach that said image processing device performs integral processing of the image data before completion of read in the two fields(Kagle et al. teach that a sub-set of a frame of image data is read out and its pre-capture components are verified. The results of this are then applied to the rest of the image frame, column 5, lines 23-44.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to process a first field of a frame of image data before reading out the second field of image data as taught by Kagle et al. in the apparatus taught by Nakamura et al. for the benefit that if the first field of image data is similar to the previous frame captured, pre-processing on the second field of image data could be skipped by simply applying the values obtained through pre-processing of the previous image frame, and thus improving processing speed(Kagle et al.(column 5, lines 23-44).

Consider claim 15, and as applied to claim 13 above, Nakamura et al. teach of white balance processing(see claim 13 rationale).

However, Nakamura et al. do not explicitly teach that the image data of the second object is processed with the same white balance as a white balance of the image data of the first object.

Kagle et al. is similar to Nakamura et al. in that image data is collected from the image sensor, preliminary processing is performed to yield first image data, second

image data is obtained through post processing, and the final image is stored in memory(see figure 2, column 3, line 4 through column 4, line 12). Kagle et al. is also similar to Nakamura et al. in that white balance processing is performed during pre-processing(column 3, lines 18-23, figure 3).

In addition to the teachings of Nakamura et al., Kagle et al. teach that the image data of the second object is processed with the same white balance as a white balance of the image data of the first object(column 5, lines 23-44).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to process data of the second object with the same white balance of the image data of the first object as taught by Kagle et al. in the apparatus taught by Nakamura et al. for the benefit of improving processing speed by skipping the pre-processing stage for the second image data(Kagle et al.(column 5, lines 23-44).

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. in view of Anderson(US Patent 6,137,534).

13. The Examiner's response to Applicant's arguments, as outlined above, is hereby incorporated into the rejection of claim 6 by reference.

Consider claim 6, and as applied to claim 2 above, Nakamura et al. teach that a control device is used to control all functions of the camera(see claim 2 rationale) and that integral processing is performed on the image data after the display device displays the object image during imaging on the image sensing element(see claim 2 rationale).

However, Nakamura et al. do not explicitly teach the apparatus further comprises a thumbnail image generation device, which generates a thumbnail image on the basis of the first image data.

Like Nakamura et al., Anderson teaches of a camera(figure 3) containing an imaging device(114) and a display(402). Anderson also similarly teaches of displaying live-view data(612, figure 6, column 7, lines 31-35), and of performing image processing(622, figure 6, column 8, lines 15-19).

However, in addition to the teachings of Nakamura et al., Anderson teaches that the apparatus further comprises a thumbnail image generation device which generates a thumbnail image on the basis of the first image data(See column 7, lines 22-41. Anderson teaches that the raw data used for live view display(i.e. first image data) is used to create a thumbnail image, due to the fact that the thumbnail image need not be a high resolution image.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a thumbnail generation device, which generates a thumbnail image on the basis of first image data as taught by Anderson in the apparatus taught by Nakamura et al. for the benefit that multiple images can be displayed on a display for review by a user with thumbnail images(column 1, lines 20-23), thumbnail images can provide instant review of captured images(column 1, lines 49-54), and thumbnail images need not be of high resolution and thus can be created from already obtained live view display data(column 7, lines 22-41).

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. in view of Hieda et al.(US Patent Application Publication 2002/0033887).

15. The Examiner's response to Applicant's arguments, as outlined above, is hereby incorporated into the rejection of claim 12 by reference.

Consider claim 12, and as applied to claim 11 above, Nakamura et al. teach that the image sensor is read out using interlaced read("interline CCD", column 3, lines 54-58).

However, Nakamura et al. do not explicitly teach of a switching device which switches between read of all pixels as read of the image data of the first object, and cumulative read or interlaced read as read of the image data of the second object.

Like Nakamura et al., Hieda et al. teach of a digital camera(figure 1). Hieda et al. also similarly teach that the digital camera contains and image sensor("CCD",1) and multiple signal processing areas("Camera Signal Processing Unit", 3, and "Recording Signal Processing Unit", 4, figure 1).

However, in addition to the teachings of Nakamura et al., Hieda et al. teach of a switching device(5, figure 1) which switches between read of all pixels as read of the image data of the first object("At this time...", paragraph 0065), and cumulative read(paragraph 0071) or interlaced read(paragraph 0069) as read of the image data of the second object(paragraph 0068).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to contain a switching device which switches between read of all pixels as read of the image data of the first object, and cumulative read or interlaced read as read of the image data of the second object as taught by Hieda et al. in the apparatus taught by Nakamura et al. for the benefit that an image signals with good vertical resolution could be obtained through cumulative read, thereby improving image quality, and image signals with worse vertical resolution, yet better time division resolution, could be obtained through interlace scanning, thereby improving processing time(Hieda et al., paragraph 0013).

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER